

LISTING OF THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A process for the packet-oriented transmission of security-relevant data under application of at least one security-oriented message consisting of a first data packet and an allocated second data packet, and at least one transmission system with a parallel and/or serial network and/or bus system with at least one user connected to it, the process, comprising:

transmitting the security-relevant data and redundant information, ~~respectively,~~
based ~~solely~~ on all the security-relevant data ~~of a respective one packet~~ within the at least one security-oriented message,

wherein, for each security-oriented message, the security-relevant data is transmitted in ~~at least one~~ the first data packet and each of the respective redundant information, based solely on all the security-relevant data of the ~~respective one~~ first data packet, is transmitted in ~~a separate~~ the allocated second data packet ~~of the at least one security-oriented message,~~

~~wherein the security-relevant data of each packet has security-relevant data comprising user data and check data, and~~

~~wherein communication participants verify the proper function of other participants via checking transmission paths over signal chains by exchanging relevant check block data of said check data.~~

2. (Previously presented) The process according to claim 1, wherein the redundant information is encoded.

3. (Previously presented) The process according to claim 1, wherein the redundant information is a check sum (CRC) calculated over the security-relevant data.

4. (Previously presented) The process according to claim 1, wherein the security-relevant data is selected from the group consisting of user data, check data, and control data.

5. (Previously presented) The process according to claim 1, further comprising transmitting several packets within a predefined superset frame structure.

6. (Previously presented) The process according to claim 5, wherein the packets within a predefined superset frame structure include the security-relevant data and the redundant information that are allocated to each other.

7. (Previously presented) The process according to claim 1, wherein the packets with the security-relevant data and the redundant information that are allocated to each other are transmitted in a parallel or serial way.

8. (Previously presented) The process according to claim 1, wherein the packets with the security-relevant data and the redundant information that are allocated to each other are transmitted in strings or separately.

9. (Previously presented) The process according to claim 1, wherein the packets include an addressing block and/or an identification code for their logical allocation.

10. (Currently amended) A device for a transmission system with at least one parallel and/or serial network and/or bus system, for the packet-oriented transmission of security-relevant data under application of at least one security-oriented message consisting of a first data packet and an allocated second data packet, the device comprising:

means, arranged on the side of the sender, for the packet-oriented embedding of the security-relevant data into ~~at least one~~ the first data packet and for the packet-oriented embedding of each allocated redundant information, respectively based solely on all the security-relevant data of ~~a respective one~~ the first data packet, into a separate the allocated second data packet of the security-oriented message,

~~wherein the security-relevant data of each packet has security-relevant data comprising user data and check data, and~~

~~wherein communication participants verify the proper function of other participants via checking transmission paths over signal chains by exchanging relevant check block data of said check data.~~

11. (Previously presented) The device according to claim 10, further comprising an encoding device for the encoding of the redundant information.

12. (Previously presented) The device according to claim 10 wherein the means for embedding are allocated means for the generation of the redundant information with the same number of bits (n) as the security-relevant data to be transmitted.

13. (Previously presented) The device according to claim 10 wherein the means for the generation and/or embedding are designed such that any possible combination of the security-oriented data of a packet unambiguously results in exactly one of the possible combinations within the packet having the respective allocated redundant information.

14. (Previously presented) The device according to claim 10, further comprising means arranged on the side of the receiver for the verification of an error-free data transmission based on the security-relevant data embedded in at least one packet and the allocated redundant information, wherein each redundant information based on the security-relevant data of a respective one packet is embedded in a separate packet.

15. (Previously presented) The device according to claim 14 wherein the means for the verification are allocated means for reading out and allocating security-relevant data and allocated redundant information received in different packets.

16. (Previously presented) The device according to claim 10, wherein several packets with the security-relevant data and/or the allocated redundant information are capable of being transmitted within a predefined superset frame structure.

17. (Previously presented) The device according to claim 10, further comprising means for the packet-oriented embedding and readout of addressing blocks and/or identification codes for the logical allocation of individual packets and/or their contents to each other.

18. (Previously presented) The device according to claim 10, wherein the means are allocated to slave devices and/or a master device.

19. (Previously presented) A transmission system comprising:
at least one parallel and/or serial network and/or bus system; and
at least one device according to claim 10.

20. (Previously presented) The transmission system according to claim 19,
wherein the network and/or bus system is at least one ring-, line-, star- and/or tree-
shaped network and/or bus structure.

21-22. (Cancelled)

23. (Previously presented) The transmission system according to claim 19,
wherein the at least one parallel and/or serial network and/or bus system comprises an
Interbus system.

24. (New) A process for the packet-oriented transmission of security-relevant
data under application of at least one transmission system with a parallel and/or serial
network and/or bus system with at least one user connected to it, comprising:

forming at least one security-oriented message from two partial messages, the
two partial messages including a first data packet and a second data packet;

transmitting the first data packet, the first data packet having user data and
check data, the first data packet totaling a first number of bits; and

transmitting the second data packet, the second data packet having a check sum
value calculated over the user data and the check data, the second data packet totaling
a second number of bits that is equal to the first number of bits.

25. (New) The process according to claim 24, further comprising combining
and jointly transmitting the first and second data packets within a frame structure.

26. (New) The process according to claim 24, further comprising transmitting the first and second data packets within different frame structures.

27. (New) The process according to claim 24, wherein the steps of transmitting the first and second data packets comprise separately transmitting the first and second data packets.